

AMENDMENTS TO THE CLAIMS:

1-16 (canceled)

17. (new): A method of estimating a carrier leak, comprising the steps of:
varying a complex gain Z applied to the received signal s between at least two values Z_1 and Z_2 ;
measuring the position of the central carrier of the signal demodulated for each applied gain;
calculating a part of the carrier leak based on the measured positions and the applied gains, the calculated carrier leak part corresponding to the leak due to the modulator.

18. (new): The estimation method as claimed in claim 17, wherein the gain is applied at a given instant and for a predetermined period and the complex gain is applied at a given instant and for a predetermined period.

19. (new): The estimation method as claimed in claim 17, wherein each of the gains is equal.

20. (new): The estimation method as claimed in claim 17, wherein another part of the carrier leak calculated on the basis of the measured positions and the applied gains corresponds to the leak due to the demodulator.

21. (new): The estimation method as claimed in claim 17, wherein the calculation of at least a part of the carrier leak includes the minimizing of the difference between the two measured positions.

22. (new): The estimation method as claimed in claim 21, wherein the minimizing is performed by a gradient type method.

23. (new): The estimation method as claimed in claim 17, wherein the calculation of the carrier leak comprises:

measuring the gain Z on the basis of the demodulated signal,
 applying to the measured position a gain $1/Z$ before the carrier position measurement and
 the difference between the duly obtained value and the theoretical central carrier being
 used to obtain an estimation of the carrier leak for each value of Z (offset_f1 and offset_f2), and
 the operation $\text{offset_f1} - \frac{1}{Z1} \frac{(\text{offset_f2} - \text{offset_f1})}{((1/Z2) - 1/Z1)}$ being used to obtain the part
 of the carrier leak due to the modulator (offset-mod).

24. (new): The estimation method as claimed in claim 23, wherein the calculation of at
 least a part of the carrier leak includes the operation $\frac{(\text{offset_f2} - \text{offset_f1})}{((1/Z2) - 1/Z1)}$ used to obtain
 the part of the carrier leak due to the demodulator (offset_dem).

25. (new): A carrier leak estimator implementing the estimation method as claimed in
 claim 17, including:

[[-]] gain variation means for varying a complex gain Z applied to the received signal s
 between at least two predetermined values;

[[-]] measurement and calculation means for measuring the position of the central
 carrier of the demodulated signal s for each applied gain and calculating at least a part of the
 carrier leak based on the measured positions and the applied gains, the calculated carrier leak
 part corresponding to the leak due to the modulator.

26. (new): The estimator as claimed in claim 25, wherein it includes a link between the
 gain variation means and the measurement and calculation means enabling the measurement and
 calculation means to chose the gain applied by the gain variation means.

27. (new): The estimator as claimed in claim 26, wherein the gain variation means
 include two UHF relays or two switches: the first receiving the signal s to which the gain $Z1$ has
 been applied, the second receiving the signal s to which the gain $Z2$ has been applied, the relay

corresponding to the gain chosen by the measurement and calculation means being linked to the output of the gain variation means.

28. (new): The estimator as claimed in claim 26, wherein the means of applying the gains includes:

a 0° - 90° coupler receiving the modulated signal s and transmitting this signal s to its 0° output (Z1) and the signal s phase shifted by 90° to its 90° output, or

a transformer or an amplifier receiving the modulated signal s and transmitting this signal s , and the signal s phase shifted by 180° , or

an electrical length I receiving the modulated signal s and transmitting this signal s , and the signal s phase shifted by φ dependent on I .

29. (new): A modulation system with automatic control of the carrier including a modulator receiving the signal to be modulated m and supplying the modulated signal s to be transmitted, including :

an estimator as claimed in claim 10 receiving the modulated signal,

a demodulator receiving the signal originating from the gain variation means and supplying to the measurement and calculation means the demodulated signal,

carrier automatic control means for adding to the signal to be modulated m the carrier leak due to the modulator supplied by the measurement and calculation means M2.

30. (new): The modulation system as claimed in claim 29, wherein the carrier automatic control means can also be used to add to the demodulated signal d the carrier leak due to the demodulator supplied by the measurement and calculation means before supplying the corrected demodulated signal to the measurement and calculation means.

31. (new): The use of the estimation method as claimed in claim 17 for a modulation with zero central carrier.

32. (new): The use of the estimation method as claimed in claim 17 for a modulation with non-zero central carrier.